

Amendments to the Claims

1. (currently amended) A voltage-controlled oscillator oscillating at a controllable ~~an~~ oscillator frequency comprising:
an LC-resonant circuit with at least one first inductor;
~~at least one~~ a controllable switching device connected to said LC-resonant circuit to periodically take on a ~~means which is arranged in the LC-resonant circuit in such a way that it periodically has a conducting and a non-conducting state at the oscillator frequency and has a control input connected to a variable dc voltage, the control voltage U_{eon}~~ ; and
~~at least one second a further inductor which can be periodically switched in parallel or in series connection with said at least one first inductor of the LC-resonant circuit inductor by way of the controllable switching device means actuated at the oscillator frequency ;~~
~~wherein the controllable switching device has a control input for controlling, by means of a control voltage, a portion of an oscillation period of the LC-resonant circuit during which portion the second inductor is connected to said LC-resonant circuit.~~
2. (currently amended) The voltage-controlled oscillator of claim 1, wherein further comprising:
~~the at least one second a further inductor is arranged to be ; periodically switchably connected to the LC-resonant circuit in parallel to one said first inductor or in series with a plurality of inductors by way of a respective controllable switching means at the oscillator frequency and the controllable switching means is controllable by a variable control voltage U_{eon} .~~
3. (currently amended) The voltage-controlled oscillator of claim 1, wherein:
the relationship of the duration of the conducting state and the duration of the non-conducting state of the switching means within an oscillation period of the oscillator varies, depending on the control voltage U_{eon} .
4. (cancelled)

- 5. (previously amended) The voltage-controlled oscillator of claim 1, wherein:
the controllable switching means comprises switching transistors.
- 6. (currently amended) The voltage-controlled oscillator of claim 17, wherein:
the MOSFETs have gate terminals that are connected to the control input of the control voltage U_{con} .
- 7. (previously amended) The voltage-controlled oscillator of claim 6, wherein:
the MOSFETs have gate terminals that are connected to parts of the circuit arrangement carrying the oscillator frequency.
- 8. (previously amended) The voltage-controlled oscillator of claim 1, wherein:
the oscillator is of a CMOS or bipolar technology.
- 9. (previously amended) The voltage-controlled oscillator of claim 1, wherein:
the oscillator is used in frequency synthesizers for wide-band systems and for multi-band uses and for clock production and clock recovery in high-speed circuits such as for example microprocessors and memories.
- 10. (currently amended) The voltage-controlled oscillator of claim 1, wherein:
a voltage-controlled capacitance is integrated in the oscillator, which is connected to a tuning voltage U_{tune} by way of a further control input, the tuning input.
- 11. (currently amended) The voltage-controlled oscillator of claim 10, wherein:
the voltage-controlled capacitance is embodied by means of at least one variable capacitor diode, wherein the effective capacitance depends on the tuning voltage U_{tune} at the tuning input.
- 12. (previously amended) The voltage-controlled oscillator of claim 10, wherein:
the tuning input of the oscillator is connected to an output of a phase-locked loop and the output of the voltage-controlled oscillator is connected to an input of the phase-locked loop.

13. (previously amended) The voltage-controlled oscillator of claim 1, wherein:
the noise of the control voltage at the control input is blocked out by means of a high
capacitance between the control input and ground.
14. (previously amended) The voltage-controlled oscillator of claim 10, wherein:
the tuning input of the voltage-controlled oscillator is connected to the output of a phase-
locked loop and the control input of the voltage-controlled oscillator is connected to an output of
a further phase-locked loop.
15. (currently amended) The voltage-controlled oscillator of claim 2, wherein:
the time-averaged effective inductance varies, depending on the control voltage U_{eon}
according to the relationship of the duration of the conducting state and the duration of the non-
conducting state of the switching means within an oscillation period of the oscillator.
16. (currently amended) The voltage-controlled oscillator of claim 35 3, wherein:
the time-averaged effective inductance varies, depending on the control voltage U_{eon}
according to the relationship of the duration of the conducting state and the duration of the non-
conducting state of the switching means within an oscillation period of the oscillator.
17. (previously added) The voltage-controlled oscillator of claim 5, wherein:
the switching transistors are MOSFETs.
18. (previously added) The voltage-controlled oscillator of claim 2, wherein:
the controllable switching means comprises switching transistors.
19. (previously added) The voltage-controlled oscillator of claim 18, wherein:
the switching transistors are MOSFETs.
20. (currently amended) The voltage-controlled oscillator of claim 35 3, wherein:
the controllable switching means comprises switching transistors.

21. (previously added) The voltage-controlled oscillator of claim 20, wherein:
the switching transistors are MOSFETs.
22. (currently amended) The voltage-controlled oscillator of claim 36 4, wherein:
the controllable switching means comprises switching transistors.
23. (previously added) The voltage-controlled oscillator of claim 22, wherein:
the switching transistors are MOSFETs.
24. (currently amended) The voltage-controlled oscillator of claim 19, wherein:
the MOSFETs have gate terminals that are connected to the control input of the control
voltage U_{eon} .
25. (currently amended) The voltage-controlled oscillator of claim 21, wherein:
the MOSFETs have gate terminals that are connected to the control input of the control
voltage U_{eon} .
26. (currently amended) The voltage-controlled oscillator of claim 23, wherein:
the MOSFETs have gate terminals that are connected to the control input of the control
voltage U_{eon} .
27. (previously added) The voltage-controlled oscillator of claim 24, wherein:
the MOSFETs have source terminals that are connected to parts of the circuit
arrangement carrying the oscillator frequency.
28. (previously added) The voltage-controlled oscillator of claim 25, wherein:
the MOSFETs have source terminals that are connected to parts of the circuit
arrangement carrying the oscillator frequency.
29. (previously added) The voltage-controlled oscillator of claim 26, wherein:

the MOSFETs have source terminals that are connected to parts of the circuit arrangement carrying the oscillator frequency.

30. (previously added) The voltage-controlled oscillator of claim 27, wherein:
the oscillator is of a CMOS or bipolar technology.
31. (previously added) The voltage-controlled oscillator of claim 28, wherein:
the oscillator is of a CMOS or bipolar technology.
32. (previously added) The voltage-controlled oscillator of claim 29, wherein:
the oscillator is of a CMOS or bipolar technology.
33. (currently amended) The voltage-controlled oscillator of claim 10, wherein:
the voltage-controlled capacitance is embodied by means of at least one variable capacitor diode, wherein the effective capacitance depends on the tuning voltage U_{tune} at the tuning input.
34. (previously added) The voltage-controlled oscillator of claim 33, wherein:
the tuning input of the oscillator is connected to an output of a phase-locked loop and the output of the voltage-controlled oscillator is connected to an input of the phase-locked loop.
35. (new) The voltage-controlled oscillator of claim 1, wherein:
the second inductor is arranged to be periodically switchably connected to the LC-resonant circuit in series with one said first inductor.
36. (new) The voltage-controlled oscillator of claim 1, wherein:
the LC-resonant circuit has at least two first inductors; and
the second inductor is arranged to be periodically switchably connected to the LC-resonant circuit, in series with a first of the at least two first inductors and in parallel with a second of the at least two first inductors.